Montgomery County Transportation Emergency Preparedness Program Exercise Report Temper ’98 Multiple Vehicle Accident Involving Radioactive Materials on Gateway Center Drive

Drill/Exercise activities were coordinated by the United States Department of Energy, Brookhaven National Laboratory, HAMMER Training and Education Center, and Westinghouse Savannah River Company for Montgomery County Fire and Rescue Service
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Background

In December of 1997, the State of Maryland requested the Department of Energy (DOE) to sponsor and coordinate a radioactive materials transportation exercise involving a group of local and state emergency responders. As part of the National Transportation Emergency Preparedness Program (TEPP), DOE EM-76 initiated an integrated, comprehensive approach to the exercise planning process. EM-76 in conjunction with three Operations Offices (Savannah River, Richland, and Brookhaven National Laboratory) teamed with the State of Maryland and Montgomery County Fire and Rescue Service (MCFRS) to pilot test DOE TEPP plans, procedures and training programs. The drill/exercise effort was code named Temper '98. Montgomery County agreed to allow DOE and its support contractors (Science Applications International Corporation, Forest Ventures Inc., Flour Daniel Hanford and Westinghouse Savannah River Company) to pilot model program assessment documents, sample plans/procedures, and draft training materials, to prepare the exercise participants for their involvement in Exercise Temper '98.

To determine county readiness, a needs assessment was conducted by MCFRS in March of 1998. This assessment identified several improvement areas: radiological equipment upgrades, plans/procedures, and training that Montgomery County Fire and Rescue responders could use to improve responder preparedness. In addition to improvement recommendations for Fire and Rescue Services, the assessment also identified improvement possibilities in the County Police Department, Emergency Management, and at the Emergency Communication Center. The recommendations outlined in the assessment were evaluated and implemented by the various Montgomery County departments to improve preparedness.

Upon completion of the needs assessment, the Exercise Support Team (representatives from the State of Maryland, Montgomery County and the DOE) coordinated procedure revisions using models developed at the DOE Savannah River Operations Office.

The results of the needs assessment were then used to determine training needs and based on those needs, training was provided using modules and hands-on activities, developed by the Richland Operation Office's Volpentest HAMMER Training and Education Center. Approximately 700 Montgomery County Firefighters, 350 Montgomery County Police Officers, and 25 Suburban Hospital medical staff were trained over a 4-month period. The training material was presented using both a facilitated and a self-study format. MCFRS is providing a training closeout report to assist HAMMER in validating training effectiveness and efficiencies.

Temper '98 involved responders from the State of Maryland's Department of the Environment Radiation Assistance Response Team, DOE Region 1 Radiological Assistance Program Team, as well as responders from the following Montgomery County Departments: Emergency Management Division, Transportation, Fire and Rescue, Police, Emergency Communication Center and the Medical Examiner. In addition to players at the accident scene, the DOE Oak Ridge Operations Office and DOE NN-60 Watch Office also participated in the exercise. The exercise lasted approximately two hours and involved approximately 75 responders.

An exercise Media Plan was developed and publicized the exercise using a Public Relations and Media Plan developed by Brookhaven National Laboratory. This plan was integrated with an Observer Plan developed and implemented by HAMMER through its subcontractor, SAIC-Quince Orchard.

The exercise scenario was a transportation accident between a delivery truck and a mini-van. A delivery truck carrying approximately 50 packages, eight of which were Radioactive II Type A packages, collided with a passenger van. The delivery truck contents, as well as the driver, were ejected from the vehicle. The force of the collision resulted in two Type A packages being breached and one becoming missing. The passengers in the mini-van sustained various types of injuries. One of the passengers in the mini-van decided to attempt to provide medical care to the delivery truck driver. However, as the passenger was walking towards the delivery truck the passenger stumbled and fell in the vicinity of a breached radioactive package. The passenger became contaminated and lay unconsciousness in the roadway. Police officers secured the accident scene while Fire and Rescue responders

extinguished a fire in the delivery truck engine compartment and provided medical attention to injured passengers. Hazardous Materials Team members surveyed the area for contamination and conducted an inventory of the delivery truck to verify all hazardous materials were accounted for. Hazardous Materials Team members confirmed that two radioactive labeled packages were breached and identified that the contents of one radioactive labeled package were missing.

The Incident Commander requested the assistance of the Maryland Department of the Environment Radiation Assistance Team and Department of Energy Region 1 Radiological Assistance Program Team. Upon arrival, both organizations were very effectively integrated into response activities by the Incident Commander. The teams assisted the Hazardous Materials Team in locating the missing radioactive labeled package contents in a storm drain. The teams completed necessary recovery planning activities to ensure all radioactive packages were accounted for and identified how breached materials would be cleaned up.

Emergency medical care providers treated the five mini-van passengers for various types of injuries and transported the contaminated passenger to Suburban Hospital. The Suburban Hospital emergency room staff provided excellent patient care and demonstrated their ability to decontaminate a contaminated patient.

The exercise was observed by more than 50 officials from various county, states and federal agencies as well as representatives from private carrier companies. Several Congressional staff members were present to observe the exercise as well. The exercise was successfully publicized by the Department of Energy, Montgomery County Public Information Office, and the State of Maryland Department of the Environment. Three television stations and two local newspapers reported on the exercise.

According to Captain Eric Jacobs from the Montgomery County Fire and Rescue Service the exercise was a huge success. Jacobs stated "The team work demonstrated by the four different DOE organizations was great; their planning and commitment for the past 10 months to ensure necessary training and planning activities were completed was excellent." Captain Jacobs also noted that participation in the Temper '98 effort has improved responder awareness on radioactive materials and has improved the organizations' capability to deal with transportation accidents involving radioactive materials.
Mike Sharon, Chief of the Nuclear Power Plant Emergency Division, from the State of Maryland Department of the Environment, also expressed his satisfaction with the exercise process by stating, " The success of the exercise is due largely in part to the excellent partnership and the effort put forward by DOE representatives."

Executive Summary

Thirteen objectives were selected from the Federal Emergency Management Agency (FEMA) Program Manual on Hazardous Materials Exercise Evaluation Methodology (HM-EEM). From the perspective of the Exercise Controllers/Evaluators, eleven objectives were met, one was not met and one was partially met.

In general, the October 7, 1998 Temper '98 Exercise was considered very successful. The Exercise Controller/Evaluation Team identified several noteworthy practices that the various agencies can continue to build upon. However, the exercise also identified several areas needing improvement. The major improvement items noted by controller/evaluators are:

- MCFRS should revise their existing Accountability Procedure to include tagging/accountability of non-department responders (examples of responders not included in the accountability process during the exercise included Maryland Department of the Environment, State of Maryland Medical Examiner and Department of Energy)
- MCFRS Hazardous Materials Team should consider better contamination control for their equipment including radiological instruments, i.e, the use of plastic to prevent instruments from being contaminated. All instruments should be calibrated on an annual basis.

- Montgomery County Emergency Communication Center and Fire and Rescue Services officials should evaluate the existing radio system and determine if radio coverage areas are sufficient to support operations during multiple emergencies.
- MCFRS Emergency Management Division should develop specific guidance (key responders in place, equipment needed in order to function effectively) for determining when the Emergency Operations Center should be declared activated and fully functional.
- MCFRS should consider additional training for responders on mass casualty incidents and accident scene assessment.

Objectives, Improvements Items and Noteworthy Practices

The objectives listed below are based on a simulated transportation (highway) accident involving radioactive materials and should be performed in accordance with the appropriate state, county and local community procedures and according to the standards and limits outlined in each respective extent of play. The expected extent of play descriptions developed in February and approved in early May by the exercise scenario development team. The numbering system employed for the objectives is based on the objective numbers from the Federal Emergency Management Agency (FEMA) Hazardous Materials Exercise Evaluation Methodology (HM-EEM); the objectives are not in sequential order.

Objective 1: Initial Notification of Response Agencies and Response Personnel

Demonstrate the ability to notify response agencies and to mobilize emergency personnel.

Expected Extent of Play:

This objective will be demonstrated by the Montgomery County Fire and Rescue Service Emergency Communications Center (ECC) identifying and dispatching appropriate first response organizations as if it were an actual emergency. All appropriate primary or back-up communications systems (radio, cell phone, landline, etc.) will be used during the exercise as in an actual emergency. The exercise will be initiated by contacting the local emergency notification network and having first responders report to the simulated accident location. All appropriate federal/state/county and local response agencies agreeing to participate will be appropriately notified and should respond. Personnel/units agreeing to participate will be deployed, real-time, to the accident scene based on accident conditions relayed via the notifications system. **Responding units will not transit in an "emergency mode" (i.e., no lights and sirens) and will not take and/or perform any action that impacts the general public near the simulated incident scene.** However, actions will be taken that demonstrate the ability to acquire and implement actions that protect the public (i.e., request and take delivery of equipment necessary to secure the accident scene).

Objective 1 - Initial Notification of Response Agencies and Response Personnel - Met

Noted Weaknesses/Improvement Items:

None Noted.

Noteworthy Practices:

None Noted.

Objective 2: Direction and Control
Demonstrate the ability to direct, coordinate, and control emergency response activities through operation of an Incident Command System (ICS) and other direction and control structures.

Extent of Play:

This objective will be demonstrated by the arrival and assumption of the Incident Commander (IC) position by the first responding unit/personnel as it would be in an actual emergency. The position and responsibility of the IC will be transferred to the senior response officer upon arrival, and a status turnover will be conducted. A visible command post, communication system, accountability system, and organizational structure will be established. The IC shall demonstrate the capability to establish and manage the ICS at the accident scene. The IC will assign ICS positions and provide instructions to the staff. Consultation with staff members, decision-making, and resolution of conflicts are skills the IC should demonstrate to provide accident scene leadership. Additional skills that will be demonstrated by the IC are coordination skills between the needs of the accident scene and other organizations involved in the response activities. In the event support agencies are activated, the IC will demonstrate the capability to coordinate accident information and needs through these agencies.

Objective 2: Direction and Control - Met

Noted Weaknesses/Improvement Items:

Accident scene accountability was good for MCFRS responders. However; the accountability system/procedure currently in use by Montgomery County was not applied to outside responding agencies. Montgomery County should consider the need to modify the existing accountability system/procedure to include tagging/accountability of non-department responders (Maryland Department of the Environment, State of Maryland Medical Examiner and Department of Energy are examples of responders not included in the accountability system/procedure). If the procedure contains provisions for documenting the response of outside agencies, Montgomery County should consider reviewing and training on the procedure application.

Noteworthy Practices:

The transfer of command between the first arriving engine company officer to Hazardous Materials Officer and eventually the Duty Chief was very effective. Adequate briefings and scene descriptions were conducted. The IC recognized the need for and promptly requested assistance from the State of Maryland Radiation Assistance and Department of Energy Radiological Assistance Program Teams.

Objective 3: Incident Assessment

Demonstrate the ability to identify the hazardous materials involved in an incident/accident and assess the hazards associated with the material involved during both the emergency and post-emergency phases.

Extent of Play:

This objective will be demonstrated by the active assessment of the incident hazards by the IC, including a preliminary observational survey of possible personnel injuries; physical hazards at the accident site; type of shipping packages involved; extent of damage to the shipping packages; whether a release occurred; estimated amount released; and identification of the hazards associated with the materials involved in the accident. The initial assessment information will be obtained from placards, shipping documents, labeling, information resource centers, and the 1996 North American Emergency Response Guidebook (NAERG'96). Based on the preliminary observational assessment, a determination of further resources to physically assess the incident site will then be made. If resources are available, further physical assessment will occur. If local resources are not available for further assessment, requests for assistance will be made as appropriate (State Response Team, DOE Region 1 RAP Team, and/or a contract Remediation Response Team).

Objective 3: Incident Assessment - Met

Noted Weaknesses/Improvement Items:

The first responding MCFRS Engine Company established communication with Montgomery County Police Department responders promptly and received a very good size up from the Police Department responders. However, controllers noted that after a wind shift, both Police and Fire initial responders were down wind of the accident. The Officer In Charge noting the wind shift requested the remaining responding units to use Shawnee Road for access to the accident scene. Montgomery County should consider addressing this item during monthly in service training.

Incident assessment includes the utilization of equipment resources operated by the Montgomery County Hazardous Materials Team. Montgomery County should consider the following possible equipment improvements:

- Survey instruments should be covered with a thin changeable plastic to prevent contamination during use.
- All instruments should be calibrated on an annual frequency. Instruments used during the exercise were out of calibration.
- Hazardous Materials Team should modify its procedure to use existing Ludlum 3 instruments instead of a CDV 700 to monitor personnel for contamination (Ludlum 3 with the pancake probe is more sensitive and better able to detect lower levels of contamination).
- Montgomery County should consider purchasing a high range ion chamber survey instrument as an addition to its existing radiological equipment inventory.

Note: Subsequent to this exercise Montgomery County Fire and Rescue Service secured funding for additional radiological/chem-bio detection instrumentation. Procurement included six additional radiological materials detection instruments.

Noteworthy Practices:

Although this objective specifies Incident Commander responsibilities, it is important to note that the first responding organization was the Montgomery County Police Department. Two response vehicles arrived at the accident scene simultaneously. The officers promptly reported to police dispatch a very good accident scene size up. The officers explained the number of vehicles involved, number of injured, that the delivery truck was smoking, that numerous packages were on the highway, and that several had radioactive labels.

Engine Company and Rescue Squad responders under the direction of the Officer In Charge (OIC) simultaneously implemented life saving procedures, fire fighting activities and hazard identification. The OIC recognized that a better response approach to the accident scene would be off Shawnee Road. The OIC informed the Emergency Communication Center and requested that remaining responding units use Shawnee Road. The OIC also recognized the need for additional assistance and requested the hazardous material team and additional medical units.

Entry teams conducting emergency medical services and fire fighting activities reported back to the OIC that of the numerous packages on the ground, several had radioactive labels and at least one radioactive package was breached.

Both the Maryland Department of the Environment Radiation Response Team and the Department of Energy Radiological Assistance Program Team from Region 1 demonstrated excellent capabilities. A variety of survey instrumentation, over-packing pigs, retrieval devices, portable laboratory counting capabilities, communication equipment, protective clothing, and computer modeling equipment were on board the teams Radiological Response Vehicles.

Objective 4: Resource Management
Demonstrate the ability to mobilize and manage resources required for an emergency.

Extent of Play:

This objective will be demonstrated by the accident scene Incident Commander. It will determine the necessary resources required for the response as a result of the incident assessment conducted by responders and the Incident Commander. Once the resources required are determined, proper notification and mobilization will occur. The development of a response strategy for containment, clean-up, and recovery are considered key elements for compliance of this objective. Internal and external resources will be integrated into the response effort by the Incident Commander. The Montgomery County Response will demonstrate the use of procedures through which the IC demonstrates the ability to call upon internal or external resources to meet incident scene requests. The demonstration will include a listing of organizational contacts, services they provide, and telephone numbers to facilitate the accident scene requests.

Objective 4: Resource Management - Met

Noted Weaknesses/Improvement Items:

The MCFRS Emergency Management Division dispatched its Communications Unit (EMC 1) to the accident scene to assist with communications. This Unit provides communication capability (hospital radio communications) not available in the Montgomery County Command Bus. The Unit arrived at the accident scene approximately 45 minutes into the event. Controllers noted that the Incident Commander did not fully incorporate the units capability into the exercise command/communications function, however, the deployment and communication equipment capabilities were satisfactorily demonstrated.

Noteworthy Practices:

The Incident Commander (unified Command) demonstrated excellent knowledge of resources needed to mitigate this accident and demonstrated the ability to obtain these resources. The Incident Commander coordinated requests for support from the following agencies:

Maryland Department of the Environment

Department of Transportation

Maryland Emergency Management Agency

Montgomery County Command Bus

Montgomery County Emergency Management

Montgomery County Police Department Collision Reconstruction Team

Montgomery County Medical Examiner

Department of Energy

Objective 5: Communication
Demonstrate the ability to establish and maintain communications essential to support response to an incident/accident.

Extent of Play:

This objective will be demonstrated by all Montgomery County Response agencies. Each agency will demonstrate the ability to establish and maintain communication between all resources activated for response to the accident. All appropriate primary or back-up communications systems (radio, cell phone, land-line, etc.) will be used during the drill as in an actual emergency. A communications system between response personnel will be established on-scene by the Incident Commander, as well as off-scene communications to local, state, federal, shipper, transportation and contract resources.

Objective 5: Communication - Met

Noted Weaknesses/Improvement Items:

Controllers noted communications were established between the Incident Commander and the Montgomery County Emergency Operations Center. A briefing was provided to the Emergency Operations Center by the Incident Commander, however, the Incident Commander did not establish a plan/schedule to conduct follow up/routine accident scene briefings. Montgomery County Chief Administrative Officer and Disaster Manager suggested the need to evaluate and determine if a plan/procedure should be established that requires the Incident Commander to establish a briefing schedule during the initial briefing with the EOC (every 30/45 minutes) and conduct briefings as scheduled.

Controllers noted several radio communication deficiencies. Some examples of these radio communication deficiencies are:

- exercise planning only identified the need for a single radio channel for exercise activities
- relaying of shipping paper information to the Incident Commander was delayed by on scene radio communication traffic

Montgomery County should determine the availability of radio equipment that may enhance communication capabilities while responders are wearing self-contained breathing apparatus.

Note: Subsequent to this exercise MCFRS identified and procured communication equipment that will improve communication capabilities during Hazardous Materials Team response activities.

The Incident Commander did attempt to fax the shipping papers to the Montgomery County Emergency Operations Center. However, the fax was not received at the EOC. Controllers noted the equipment failure and that a request was not made to the Incident Commander to re-send the fax. Montgomery County should consider developing a plan/procedure that outlines steps to verify communications are transmitted and received correctly. Receipt of this fax would have eliminated the EOC's confusion about the quantity and type of hazardous materials involved.

Noteworthy Practices:

None Noted.

Objective 6: Facilities, Equipment, and Displays
Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

Extent of Play:

The Montgomery County first responders and officers should demonstrate the ability of emergency facilities designed to support emergency operations. Facilities include mobile and/or fixed command post operations. Response functions will be evaluated to determine if emergency support facilities used during the accident inhibited or limited response capabilities. Facility evaluation will include determination if adequate space, power, back-up power, restroom facilities, rehabilitation areas, communication equipment, necessary maps, and display systems are available and/or used.

Objective 6: Facilities, Equipment, and Displays - Met

Noted Weaknesses/Improvement Items:

The Emergency Operation Center (EOC) should consider the following items to enhance capabilities:

- A headset should be provided at the Communications Officer position
- Channel 1 monitor or CAD display at this position would have eased the lack of information being relayed from the field
- Better use of the Montgomery County Emergency Management Command/Communication Unit
- Incorporate into an existing EOC position, the responsibility to monitor video transmission from Montgomery County Transportation Department Aircraft 1
- Evaluate current policy/procedure for utilization of status boards (erasable white boards). Develop a system that ensures information is retained for historical reference (shift turnover, event reconstruction, litigative actions, or post accident investigations)

During this exercise the EOC was declared activated upon completion of equipment setup, however, minimal staffing was in place. Montgomery County has a policy/procedure for partial and full activation of the Emergency Operations Center. Montgomery County should consider additional practice in implementing their policy/procedure that identifies necessary/minimum staffing needed for the EOC to be considered functional.

Noteworthy Practices:

The Emergency Operations Center staff donned color-coded vests that had emergency titles/functional areas inscribed. This aided Emergency Response Organization members in the identification of positions and areas of responsibility. This practice has been modeled after the Incident Command System to ensure greater coordination between field command activities and support functions.

Objective 8: Emergency Information Media
Demonstrate the ability to coordinate the development and dissemination of clear, accurate, and timely information to the media.

Extent of Play:

The Montgomery County response will demonstrate the ability to appoint a single designated spokesperson to interact with the media and provide for the timely and effective release of information. The spokesperson will have access to all information and a technical staff. The spokesperson will demonstrate the capability to provide information to the media that is understandable (consistent and avoids the use of technical jargon).

Objective 8: Emergency Information Media – Not Met

Noted Weaknesses/Improvement Items:

The assignment of an accident scene Public Information Officer is a collateral duty for the Emergency Medical Service Officer. This objective was not met because the assigned PIO was performing emergency medical service duties. Controllers noted that the EMS/PIO Supervisor properly prioritized, assessed and implemented response actions according to standard operating procedures. Saving lives and then providing information to the media is the established order of business. Montgomery County should consider the following suggestion:

- Evaluate the need to train additional responders to staff or act as the Public Information Officer. The practice of performing the PIO function as a collateral duty works well during a small event (minimal casualties and single hazard responses). However, during mass casualty or multiple hazard events, it is not likely that the EMS Officer will have time to conduct the PIO function of ensuring that accurate information is released, and misinformation/ rumors are corrected.

Noteworthy Practices:

None Noted.

Objective 9: Protective Actions for the Public
Demonstrate the capability to decide upon and direct the implementation of protective actions for the public.

Extent of Play

This objective will demonstrate the Incident Commander's capability to promptly assess the severity of the hazard, determine the actions to be recommended, and implement those actions for the protection of the public. The IC will demonstrate the capability to continuously evaluate the accident scene and, as necessary, adjust protective action strategies. Actual notification and the implementation of protective actions will be simulated actions (i.e., sheltering or evacuation).

Objective 9: Protective Actions for the Public – Met

Noted Weaknesses/Improvement Items:

The Incident Commander did an excellent job of determining the Clarksburg Elementary School was outside the protective action area and notifying the school of the transportation accident. This notification provided a contact for the school to call back if they had questions, as well as provided information to school officials that could be shared with parents calling to question their child's safety. However, this information was not provided to the EOC which was also developing a plan to notify the school officials. This lack of communication resulted in a duplication of effort.

Noteworthy Practices:

None Noted.

Objective 10: Response Personnel Safety
Demonstrate the ability to protect emergency responder health and safety.

Extent of Play:

The Montgomery County HAZMAT Team will demonstrate the capability to establish control zones and regulate the movement of personnel throughout the accident scene. Visible and identifiable barricades will be deployed/established. The HAZMAT Team will implement entry and exit control procedures. The HAZMAT

Team will demonstrate the capability of determining type and usage of appropriate personal protective equipment (PPE), contamination control, and decontamination of contaminated emergency responders, victims, and emergency equipment.

Objective 10: Response Personnel Safety – Met

Noted Weaknesses/Improvement Items:

MCFRS should develop more specific exposure control procedures for Hazardous Material Team responders. These procedures should include dose rate limits and specific instructions for tracking doses measured by direct-reading dosimeters.

MCFRS should consider the use of thermoluminescent dosimeters (TLD) for use by Hazardous Materials Team responders. TLD's will aid in providing a definitive record of cumulative dose received over a period of time for multiple responses. This record may prove invaluable if long term medical evaluation of Hazardous Materials Team responders is necessary.

Controllers noted the Operations Officer had some difficulty in managing the logistics of multiple responders in the Hot Zone during this transportation emergency. A critical function of Incident Command is to assign a function, to track entry times, and monitor status of entry team responders. Controllers noted this task was complicated because of the number of multiple tasks being performed in the Hot Zone. MCFRS should evaluate current standard operating procedures to determine if improvements are necessary. Adding Accountability/Safety positions or reducing entry team positions should be considered.

Controllers noted that a Rehabilitation Area was successfully established but was not utilized to rehabilitate responders. The Incident Commander should have assigned a position to ensure responders were cleared from the Hot Zone and sent to a rehabilitation area.

Noteworthy Practices:

From arrival of the first Engine Company, Montgomery County Fire and Rescue Services did a good job of establishing and continually evaluating control zones. Responders seemed aware of their surroundings and avoided direct physical contact with breached packages. The establishment of the Control Zones (Hot and Warm) significantly reduced the possibility of spreading contamination.

Objective 11: Traffic and Access Control
Demonstrate the organizational ability and resources to implement site security and to control evacuation traffic flow and access to evacuated and sheltered areas.

Extent of Play:

This objective will be demonstrated by the Montgomery County Response effectively implementing accident site security measures. Activities to be demonstrated include appropriate use of resources and effective traffic control to divert unnecessary traffic away from the area of the incident/accident. Although security units will be sent to the proper locations for traffic control, no actual roadblocks/detours, etc. will be established that will affect the general public, other than exercise site control. However, materials necessary to accomplish road blocks/detours will be planned and requested for delivery.

Objective 11: Traffic and Access Control – Met

Noted Weaknesses/Improvement Items:

Montgomery County Police Department failed to recognize and control a mock news media role player. The mock media player was able to gain access to the command post, the decontamination area, the Hot Zone including the delivery truck and breached Type A radioactive packages. Montgomery County Police should be made aware that persons interested in the event (concerned citizens, media, etc.) will sometimes use unique methods to gain entry to the accident scene. After getting past the security barricade, the mock media person approached a firefighter at the accident scene and began asking questions. The firefighter informed the mock media person to report to the command post for information about the accident. After staying at the command post for over 30 minutes, the mock media person decided to approach and enter the Hot Zone to obtain addition information.

Noteworthy Practices:

Montgomery County Police Department responders did an excellent job in controlling vehicle traffic and establishing road barricades. Police officers established barricades and briefed the Incident Commander on barricade locations. Police officers stopped and questioned drivers of vehicles approaching the street barricade

trying to gain access to the accident scene. As necessary Police officers informed or requested approval from the Incident Commander prior to allowing entry into the accident scene.

Objective 14: Emergency Medical Services
Demonstrate the adequacy of personnel, procedures, equipment, and vehicles for transporting contaminated and/or injured individuals and the adequacy of medical personnel and facilities to support the operation.

Extent of Play:

This objective will demonstrate the EMS responders' capability to determine extent of injury; implement necessary contamination control measures; treat injured persons; and identify and transport the injured to a medical facility. Transport will be to a controller designated location rather than a medical facility, if no medical facilities are participating.

Objective 14: Emergency Medical Services – Partially Met

Noted Weaknesses/Improvement Items:

Montgomery County emergency medical care providers appropriately concentrated on a treatment in place process for victims. Montgomery County should consider development of an alternative action plan (mass casualty procedure) or should have implemented a procedure that provides for a more rapid stabilization and removal of the injured to a safe area. Upon delivery at the safe area, necessary treatment options and transport activities can be completed.

Controllers noted that the accident scene lacked recognizable Emergency Medical Service Field Command. Accident scene hazards contributed to limited and/or slow triage. This delay could have increased exposure to potential hazards and prolonged emergency medical care.

The patient extrication/removal process used by emergency care providers during the exercise could have been conducted more efficiently. Care providers should have recognized the potential for unnecessary exposure to accident scene hazards and relocated ambulances from the Shawnee Road side of the accident to the Highway 121 side. Accident victims could have been more promptly extricated/removed and transported. Implementing the aforementioned actions would have resulted in better contamination control practices, the practice of time, distance and shielding to reduce exposures, as well as eliminating the need for numerous responders to walk through the Hot Zone.

Noteworthy Practices:

Suburban Hospital demonstrated excellent contamination control, patient assessment, and decontamination capabilities. Hospital staff appropriately prepared the hospital receiving area, hallway and emergency room to control/eliminate contamination spread. Nurses and doctors providing treatment to the patient were appropriately dressed (protective clothing) and handled possibly contaminated clothing and waste generated during the treatment very effectively.

Objective 15: Containment and Cleanup
Demonstrate the ability to implement appropriate measures for containment, recovery, and cleanup of a release of a hazardous material.

Extent of Play:

This objective will be demonstrated by the IC and HAZMAT Team assessing, notifying and obtaining resources for assistance. The IC will demonstrate the ability to call upon internal or external resources to meet incident scene requests. When adequate resources are available (internal or external), the IC and HAZMAT Team will demonstrate the capability to assess the impact of the release, and develop appropriate planning strategies for control and containment of the released materials.

Objective 15: Containment and Cleanup – Met

Noted Weaknesses/Improvement Items:

Because of inclement weather the Incident Commander recommended that breached radioactive materials packages be covered to prevent additional release or spread of radioactive materials. Responders properly covered one breached package; however, they failed to cover the second breached package.

As demonstrated by Montgomery County Responders, medical treatment of injured victims takes priority. During the exercise, controllers noted that improvements can be made in patient handling and contamination control. Model procedures/training include steps to remove the patients clothing and wrapping of the patient in a blanket to contain the contamination. During the exercise, the first and second patients were not properly packaged for transport. However, as the third and fourth patients were packaged, proper procedures were followed.

Noteworthy Practices:

The Incident Commander successfully integrated the response capabilities of the Maryland Department of the Environment and the Department of Energy into Montgomery County Hazardous Materials Team operations. Radiation Assistance Teams from both agencies teamed with the hazardous materials team to locate a missing radioactive material source. The teams also conducted an assessment of the entire accident scene.

Objective 16. Incident Documentation and Investigation
Demonstrate the ability to document a hazardous materials incident/accident and response.

Extent of Play:

This objective will be demonstrated by Montgomery County Response organizations implementing appropriate emergency response log keeping, gathering lessons learned from drill participants, ensuring follow-up documentation and corrective actions are accomplished, and debriefing of drill participants is completed following the drill.

Objective 16. Incident Documentation and Investigation – Met

Noted Weaknesses/Improvement Items:

None Noted.

Noteworthy Practices:

None Noted.

DOE Headquarters Exercise Objectives

The objective listed below was based on a simulated transportation (highway) accident. It should be performed in accordance with the appropriate DOE-HQ procedures, and according to the standards and limits outlined in the extent of play.

Objective 1: Initial Notification of DOE-HQ Organizations and National Federal Agencies

The DOE-HQ Watch Office will demonstrate all emergency notifications to the DOE-HQ ERO, DOE-HQ Senior Management, and other National Federal Agency in accordance with DOE Order 151.1 and DOE-HQ Emergency Management Plan.

Extent of Play

Notification will be received from ORNL and/or BNL to the DOE-HQ Watch Office. The DOE-HQ Watch Office will receive the information as an emergency notification (per the DOE-HQ Watch Office Procedures) unless notified that it is an UO or ON. The Director of Emergency Management (NN-60), NE-70 Point of Contact, and EM-76 (TEPP Program/Emergency Management Coordinator) will be notified. The notification to the Emergency Manager (NN-1) will be simulated. NN-60 will confer with the NE-70 POC and the EM-76 Emergency Management Coordinator regarding activation of an Emergency Management Team (EMT). The decision will be made that activation of an EMT is not required and an EM HQ Monitoring Team (simulated) will be convened to handle information related to the occurrence. The simulated monitoring team consists of one or several people monitoring the incident.

Objective 1: Initial Notification of DOE-HQ Organizations and National Federal Agencies – Met

Noted Weaknesses/Improvement Items:

None Noted.

Noteworthy Practices:

None Noted.

Sequence of Events Timeline

Clock Time	Event/Responder Action(s)
10:01	Accident scene call placed, information recorded by Montgomery County (MC) Emergency Communication Center Specialist (ECCS)
10:03	Accident dispatched as personal injury collision by MC ECCS. Dispatch consisted of 1-BLS Ambulance, 1-Heavy Rescue Squad, 1-Engine Company
10:05	MC Police Department units (2) arrive at the accident scene
10:06	MC PD provided MC ECC with accident scene information. Officers approach wrecked vehicles and described the following: number of injuries observed, nature of accident, number and type of vehicles, identified radioactive materials, and heavy smoke.
10:06	Fire and Rescue Engine 91 arrives on the downwind side of the accident scene. PD officers confer with E91 Officer in Charge (OIC) and responders.
10:09	E 91 advises ECCS exact accident scene location. Remaining crew members donning protective clothing and advancing a hose line. OIC request additional units respond using Shawnee Road.
10:11	E 91 OIC recommends full protective clothing to responders and request ECCS dispatch additional resources (hazardous materials and medical units).
10:14	E 91 responders advance on fire with hose line and fire extinguisher.
10:15	E 91 extinguishes fire using fire extinguisher.
10:15	Additional fire crews arrive at accident scene. Used Shawnee Road approach.
10:16	Responders evaluating victims (one in street and four in van).
10:16	Fire fighters evaluate Victim F (delivery truck driver) in ditch.
10:16	Vehicle extrication activities begin, tools setup at hot zone line for entry team pick up and use.
10:19	OIC advises ECC of markings on packages and that product is leaking.
10:20	Response teams begin establishing "hot zone" using barricade tape.
10:22	"Hot Zone " established. Shipping papers have been obtained from accident truck. Fire Rescue personnel continue treating victims, Victim D in street being provided C-spine stabilization, victims in mini-van (A, B,C and E) being provided emergency care procedures.
10:23	Oxygen being administered to Victim E (asthma attack).
10:23	Responders remove Victim F from ditch to street level.
10:24	Responders begin emergency care procedures on Victim F. Controllers inform responders victim is dead.
10:25	Responders treating Victim F, report to OIC possible contamination from handling and treating victim.

Sequence of Events Timeline

Clock Time	Event/Responder Action(s)
10:25	Shipping papers read for contents. Attempt made to relay information to responding Incident Commander. Radio transmission not successful.
10:26	Incident Command established (Duty 9).
10:27	OIC request separate radio channels for Operations and EMS Sectors working the accident.
10:28	Second radio transmission to Incident Command detailing shipping paper information is successful.
10:30	Operation Sector Officer decides to increase the size of the Hot Zone. All personnel inside the Warm and Hot Zones are considered contaminated.
10:30	Victim C removed from mini-van (placed curb side). Victims A, B, and E still in mini-van and receiving treatment from responders.
10:32	Victim D being packaged for transport to hospital
10:33	Rehabilitation and SCBA cylinder change out areas established.
10:35	Victim D repackaged to contain possible radiological contamination.
10:36	Victim D is passed from Hot Zone to the Warm Zone for transport to the hospital.
10:38	Treatment of victims A, B, C and E continue.
10:41	Victim A removed from mini-van and responders continue treatment.
10:41	Hazardous Materials Team on scene and conducting size up.
10:42	Victim E removed from mini-van and taken to Warm Zone.
10:44	Responders treating Victim A are advised that the patient is in respiratory arrest
10:49	Incident Command request assistance from Maryland Department of the Environment Radiation Response Team and Department of Energy Region 1 Radiological Assistance Program Team.
10:51	First Hazardous Materials Entry Team monitoring for radiological contamination as they approach Hot Zone. Team determining location of radioactive packages and marking package locations.
10:52	Responders are informed Victim A has expired. Controller instructs to discontinue treatment.
10:55	Ambulance crew is instructed to transport Victim D to Suburban Hospital
10:57	Victim B removed from mini-van and moved to Warm Zone.
10:58	MDE Radiological Response Team arrives at accident scene.
11:01	Victim C moved from curb side to Warm Zone.
11:03	Decontamination area being set up
11:03	Second Hazardous Materials Entry Team entering Hot Zone. Assisting in package location and marking.

Sequence of Events Timeline

Clock Time	Event/Responder Action(s)
11:04	Ambulance 38 departs for Suburban Hospital with Victim D.
11:11	Victims B, C, and E placed in Warm Zone are monitored for contamination.
11:11	Operations Sector officer request MC Police Department to remove Mock Media player from the Hot Zone.
11:13	MDE Radiological Response Team assists MC Hazardous Materials Team in monitoring victims in the Warm Zone for radiological contamination.
11:14	MC Hazardous Materials Entry Teams identify one missing package and suggest possible location as a storm drain near the wrecked delivery truck.
11:17	MC Hazardous Materials Entry Team confirms that there is a radiological container in the storm drain and informs the Operations sector office the container appears intact.
11:17	Region 1 Department of Energy Radiological Assistance Program Team arrives at accident scene.
11:20	All victims checked for contamination, packaged and removed from scene.
11:22	DOE RAP Team receives a briefing from MC Fire and Rescue representative. RAP informed six victims, two fatalities, eight radioactive placarded packages, two broken open and one lost.
11:25	DOE RAP Team Leader meets with MDE Radiation Response Team and MC Hazardous Materials Team representative to discuss shipping papers, isotopes, activity, physical form, and number of packages.
11:30	Operations Sector officer request breached radiological packages be covered with plastic.
11:32	Hazardous Materials Team covers breached package with plastic.
11:35	Operations Sector officer requests a briefing with MDE, DOE and MC Hazardous Materials Team to discuss options for package accountability and recovery.
11:40	MC Hazardous Materials Entry Teams have been cleared of contamination and exited the Hot Zone.
11:50	Operations Sector officer conducts a briefing with MDE, DOE and MC Hazardous Materials Team to discuss options for package accountability, decontamination of two fatalities and accident scene recovery and which agency is in command.
11:58	Briefing complete joint entry being planned using resources from MDE, DOE and MC.
12:02	Joint entry being conducted
12:09	Entry Team confirms the location of missing package. The storm drain manhole cover was removed and the package was observed approximately 15 feet below street level in the storm drain. The team determined the package contained Tungsten W-188. The package was described as intact, was monitored for contamination, retrieved and repackaged.
12:15	Entry Team confirms two broken packages. Package one is located in the middle of Gateway Drive. The contents has been identified as Holmium 166. The second package is located in a ditch approximately 30 feet off Gateway Drive. The content of this package is also Holmium 166.

Sequence of Events Timeline

Clock Time	Event/Responder Action(s)
12:22	Recovery Contractor arrives at accident scene and discusses recovery and product clean up options with Operations Sector officer, MDE and DOE.
12:32	Temper '98 Exercise terminated.

Exercise Controller Organization

Name	Position
Kelley Kelkenberg, DOE-EM	Exercise Director
Jim Cruickshank, DOE-EM	Assistant Exercise Director
Tony Hass, WSRC	Lead Controller
Ken Keaton, WSRC	Lead Incident Scene Controller
Capt. Eric Jacobs, MC F&RS	Exercise Safety Officer
Ray Weber, DOE Region 1	TEPP Interface and Media and Public Interface
Mary Jardine, SAIC	Observer Representative
John Mitchell Carol Hanlon	DOE Headquarters Operations Center Watch Office DOE-HQ TSC
DOE Region 1	DOE Region 1 Operations Center
Christina Edwards	DOE Region 1 RAP Team
Lt. John Kapinos, MC PD	Incident Scene-Lead Law Enforcement Montgomery County Police Department Accident Scene Reconstruction Team
Alan Jacobson	MDE State Radiation Response Team Controller
Bob Steadman	County ECC Dispatcher Controller
Capt. Michael Donahue Lt. Stephen Jones, MC F&RS	Incident Scene-Responding Unit(s) (Fire Departments) Lead Controller Fire Operations Staging, Safety, and Rehabilitation Controller
CAPT. Barry Reed Tom Clawson Suburban Hospital	Incident Scene-Responding Unit(s) (EMS Units) EMS Lead Controller Suburban Trauma ER Controller
Mike Sharon, MDE Ray Manley, MDE	HAZMAT Lead Controller and Monitoring/Survey Decontamination
Clark Hyder, DOE-EM	Exercise Control Cell
Jim Price/June Ollero Ken Niles	Congressional and Visitor Interface Facilitator
Davida Matthews	Montgomery County EOC Controller

Exercise Observer Attendee List

Print Name	Sign Name	Company/Organization
Andy Gandasik		PA DEP
Randolph Eastman		PA DEP
Roy A Parker		FedEx
GEORGE RUBERG		UETC - Network News
Audrey Adamson		UETC / TECHNO
Owen Lowe		DOE/NE-70
Gerri Sollenberger		DOE
Eric Weinstein		NRC
ABY MOTHSENI		NRC
Stephen M. Barth		FEMA
Bernice W Zaidel		FEMA
JOSE CORTES		FEMA
Michael Cosgrove		PA DEP
Michelle Dyarman		PA DEP
Terry Deistrie		PA DEP
Dona MASON		FEDEX
Mike MCHEATH		Fedex
Anaette Khawane		FedEx
Joseph W Moon		JW Moon Company
Peter C Stang		USDOE DP-23
Gene Schmitt		DOE-EM70
RICHARD HANNON		DOT/RSPA
RICHARD BOYLE		DOT/RSPA
Kelvin Kelkenberg		DOE-EM76
MICHAEL REESE		EM-76 DOE
Gary Goldberg		DOE NN-60

Print Name	Sign Name	Company/Organization
RG Kitzgle	[illegible]	DEP/BRP
Ella McNeil	Ella McNeil	DOE/EM-76
ELISSA TURNER	Elissa Turner	DOE/RW-44
Marlow J. Stangler	Marlow J Stangler	Fema Retired.
Liz Walker	Liz Walker	DOE/DP-23
Minnie Anderson	Minnie Anderson	Congressman Morella
Rich McKay	Rich McKay	Balto City EMO
Bert Kimbert	[illegible]	Balto City EMO
DON PIKE	[illegible]	GAITHERSBURG P.D.
CARL MARGOLIS, M.D.	[illegible]	MEDICAL EXAMINER
Nancy Osgood	[illegible]	US. NRC
Joseph M. Lewandowski	Joseph M. Lewandowski	Balt. City Health Dept.
Michael Kalman	[illegible]	SAIC
KERRY A. LEIB	Kerry A. Leib	Pa. DEP
TOM HUGHES	[illegible]	PA EMA
Marlon Verrelli	[illegible]	Pa DEP
John T MAHER	[illegible]	PA DEP Rad Prot
James F. Hughes	James F. Hughes	PA DEP

Signature Page

_____ _____
Theodore L. Jarboe Date
Deputy Chief
Fire and Rescue Service
Montgomery County, Maryland

_____ _____
Kathleen Henning Date
Program Coordinator
Division of Emergency Management
Montgomery County, Maryland

_____ _____
Eric Jacobs Date
Captain
Fire and Rescue Service
Montgomery County, Maryland

_____ _____
Kenneth E. Keaton Date
Transportation Emergency Preparedness Coordinator
Westinghouse Savannah River Company
Aiken, South Carolina

_____ _____
Robert A. Hass Date
Senior Emergency Preparedness Specialist
Westinghouse Savannah River Company
Aiken, South Carolina

_____ _____
Davida P. Matthews Date
Manager Site Emergency Management Programs
Westinghouse Savannah River Company
Aiken, South Carolina

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Christina Edwards, DOE Savannah River Site – Aiken, SC
June Ollero, DOE HAMMER – Richland, WA
Ray Weber, Forest Ventures Inc. – Northport, NY
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Mary Jardine, SAIC – Germantown, MD
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Lieutenant John Kapinos, Montgomery County Police Department – Germantown, MD
Sargent Ken Holt, Montgomery County Police Department – Germantown, MD
Major Alan Rodbell, Montgomery County Police Department – Germantown, MD
Robert Nemchin, Montgomery County Division of Emergency Management – Rockville, MD
Roland Fletcher, State of Maryland Department of the Environment – Baltimore, MD
Mike Sharon, State of Maryland Department of the Environment – Baltimore, MD
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Ken Niles, Oregon Office of Energy – Salem, OR